



# Install Guide

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2024

**It's Real Wood Made Better.**

# Contents

Installation & Application

Fixing & Installation

Frequently Asked Questions

Performance Summary

Warranty

3

**Disclaimer:** This manual remains the property of registered Bodyguard suppliers.

6

The information in this manual is provided in good faith, based upon trials and experience with the product.

8

Bodyguard Wood Products Ltd will accept no liability or responsibility if the information contained in this manual is incorrectly or inappropriately applied or interpreted, nor if used in a manner other than as explicitly set out in this document or in referenced documents available on the website [www.bodyguardwood.com](http://www.bodyguardwood.com)

10

11

The information contained in this manual was correct at the time of writing. However, Bodyguard reserves the right to make changes or improvements to Bodyguard without prior notice.



# Install & Application

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## 1 Weather proofing

Construction detailing maximizes the performance of exterior cladding products: detailing roof overhangs; flashing at roof edges; head sill and jamb flashings around doors, windows and openings; weatherproofing external and internal cladding corners and butt joints; all these improve the performance of the product.

It's also important to include effective vapor barriers, drainage cavities, adequate eave troughs and downspouts. Insulation and ventilation throughout the building are important elements in achieving the designed performance of exterior products.

There is variability in building design and weatherproof detailing, so it is the responsibility of the designer or builder to ensure that Bodyguard products are installed with appropriate water management flashings and systems.

It is vital to eliminate any areas of the exterior cladding or trim that have the potential for water or moisture entrapment; continual water or moisture entrapment will eventually cause the product to rot or fail.

## 2 End-sealing

Use a brush-on or spray-on wood preservative containing zinc naphthenate on all saw cuts, drilled, notched and punched holes, screw, nail and fastener penetrations, during installation. Using an end cut preservative is required under the terms of the Bodyguard warranty.

## 3 Nailing & fixing

Bodyguard products should always be installed in accordance with the highest industry standards.

The proper application and nailing practices are essential for maximizing the performance and appearance of Bodyguard products.

In order to allow for the normal seasonal movement, nailing should be such that it does not restrict movement so do not nail through overlapping pieces.

Selection of proper nails is important. Siding nails with annular-ringed shanks provide the best holding power. Hot-dipped galvanized, high tensile aluminum or stainless fasteners are also recommended. The active ingredients in the carbon-based treatment are non-corrosive to nails and fastenings.

## Weatherproofing joints and corners

For best results we recommend the use of miter/scarf joints. However standard butt joints can be used without an expansion gap. We recommend that butt joints be covered with a flashing. Joints should be staggered up the wall (not lined up vertically). Miter joints should face away from the prevailing wind. All mitered corners should have concealed secondary flashings and a face flashing is recommended at all flat vertical joints, mitered or butt.

Do not install directly on top of foam sheathing. In warm humid climates this has been shown to retain moisture between the sheathing and siding.

All nailing should be over studs and total effective penetration into a solid wood base should be at least 1 1/2". Nailing patterns should comply with best industry practices.

Do not install Bodyguard sidings, trimboards or moldings that have a moisture content of over 15%.

The Warranty will not apply to any product which has not been kept dry or which has not been painted in accordance with the specifications following.

# Install & Application

Hand nailing is recommended so that the factory applied coating system will not be broken. If a nail gun is used, precise adjustment of air pressure is necessary to achieve a flush finish. Alternatively, nails can be countersunk or punched 1/16", beneath the exterior surface and sealed with an end sealer then filled with an exterior grade putty, primed and undercoated to obtain a smooth surface. Pre-drilling near the ends is always recommended as a precaution to avoid the possibility of end splitting.

Punched or countersunk nailing exposes raw timber fibres and allows moisture direct entry into the wood. As a result, filling and sealing must immediately follow installation. If this is omitted then temporary dimensional change to the timber profile around the nail location will occur.

## 4 Gluing

Sidings, trimboards and exterior moldings are not normally glued onsite but, if the occasion should arise, then any exterior water resistant wood adhesive compatible with the Bodyguard treatment is appropriate.

Bodyguard products are not intended for structural uses, and where impact adhesives are to be used or highly stressed glue joints are to be made (e.g. glue laminated beams) specific wood engineering advice should be sought.

## 5 Putties, mastics, sealants

Sealants are used to assist with weather proofing at joints but MUST not be relied upon for primary weather protection. Exterior formulation putties, mastics and sealers should be compatible with alkyd (oil-based) paints and the solvent-based treatment. If in doubt consult your sealant supplier or manufacturer.

If the surface is unsatisfactory and repair is necessary, this should be documented and completed before finish coating is applied.

### Other instructions

1. Nail holes: if nails are countersunk, seal exposed wood with an end sealer then fill nail holes with an exterior grade wood filler, then spot prime and undercoat. In temperatures less than 40°F use cold weather caulking sealants.
2. Remove all soft and chalky paint, dirt etc., and sand to a smooth even finish.

## 6 Painting

The use of colors with a Light Reflectance Value (LRV) of 45 or more is recommended, as these lighter colors reflect significantly more heat. Testing has shown that dark colors can generate temperatures in excess of 185°F.

This level of heat can reduce the life of the paint film and cause cracks to appear in the timber surface. In direct sunlight, light colors under the same conditions can be as much as 95°F cooler. (LRV of white is 95-100, LRV of black is 0-5).

Bodyguard is supplied pre-primed (double coated) and the following is recommended.

### Recommended specification for painting pre-primed Bodyguard products

Bodyguard products must be painted as soon as practicable after installation.

Bodyguard products must be dry before commencing painting (a moisture content of 15% or less).

Apply the topcoat in warm, dry weather not below 50°F.

Painting with solid acrylic stains is not recommended as UV light will penetrate the transparent stain and damage the primer paint.

1. Apply two full coats of premium quality exterior acrylic house paint as per manufacturer's instructions. For best results allow 24 hours between coats.

The painter or painting contractor should check the Bodyguard surface prior to applying paint coatings.

### Moisture uptake before installation

Kiln-dried radiata pine wood is hygroscopic. It will absorb moisture in a damp environment and release it in a dry environment. If wood absorbs moisture, some dimensional swelling may occur. This will disappear when the wood returns to its original moisture content.

Primers provide limited protection against moisture uptake so it is essential that Bodyguard products are kept dry and stored in a dry environment away from damp ground, until installed.

During the installation process all exposed unprimed surfaces resulting from cut ends, miters, notching, boring, punched nail holes or similar, should be sealed with an end sealer. Then painted with a suitable oil-based or acrylic premium exterior wood primer.

If paint coatings are applied to primed wood in which moisture-related dimensional swelling has occurred, then the process of moisture release is slowed considerably.

Shrinkage lines will occur as the wood returns to its equilibrium moisture content and original machined dimensions. To prevent this, ensure the wood is dry and at original machined dimensions before applying paint coatings. This applies to all products, expressly sidings.

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### Moisture uptake after installation

Application of the recommended painting specification will provide protection against moisture uptake minimizing dimensional change.

The primer will not protect against moisture uptake when exposed to continued rain or extreme weather. Under these conditions temporary dimensional swelling may occur.

It is essential that if swelling is evident, the product should be given time to dry out and return to its equilibrium moisture content and manufactured dimensions before application of any final coating system.

### 7 Resin bleed

Wood is a natural product and resin is a natural constituent of the pine species. Resin bleed is rare, but most likely to occur in hot sheltered conditions, or where the product has been painted a dark color.

Adherence to the painting specifications will assist in minimizing the potential for resin bleed. It is also recommended that the product is not painted in dark colors or high gloss finishes. (see 6. Painting)

### \*Nailing detail

Refer to siding drawings for nailing positions. To achieve the best holding power use annular ring shanked nails manufactured from hot dipped galvanized steel, stainless steel or aluminum. Do not use plain or electroplated steel nails or staples.

If flathead nails are used ensure these are driven flush. However, if nails are countersunk or punched use a countersunk conical head-shaped nail of the correct length and ensure they are 1/16" below the siding surface to allow for sealing and filling prior to painting. A punched nail damages the primer surface and will allow moisture penetration. Sealing and filling is required immediately after nailing to prevent this.

Ensure nails penetrate solid wood sheathing and studs or blocking by a minimum of 1 1/2".

**Always refer to your local building regulations.**



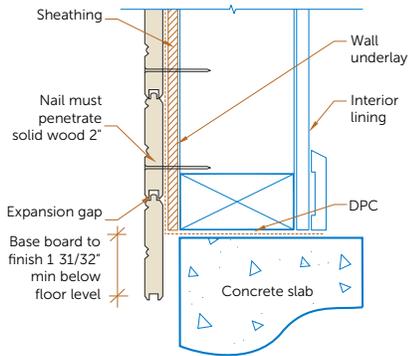
**Always adhere to highest industry standards and best practices when installing Bodyguard product.**

# Fixing & Installation

## HORIZONTAL INSTALLATION

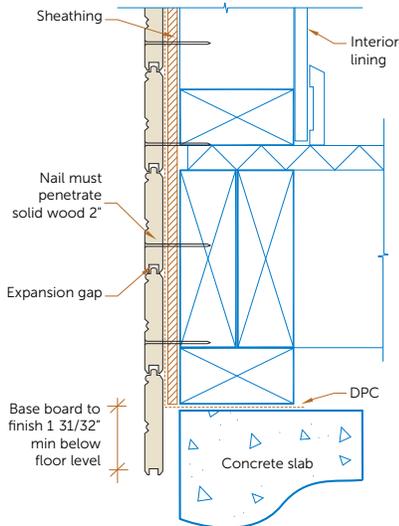
### Tongue & Groove Siding Plan

#### 1 Direct fixed to base of wall & concrete floor



Face nail with one 2 1/2" nail, located 1 1/4" from bottom joint.

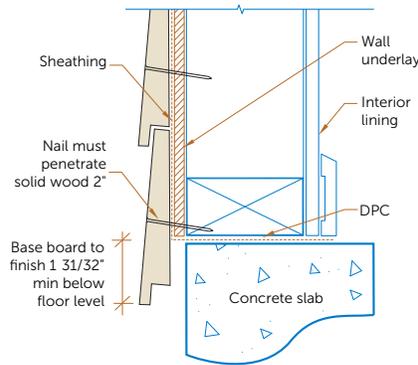
#### 2 Direct fixed to base of wall & timber floor



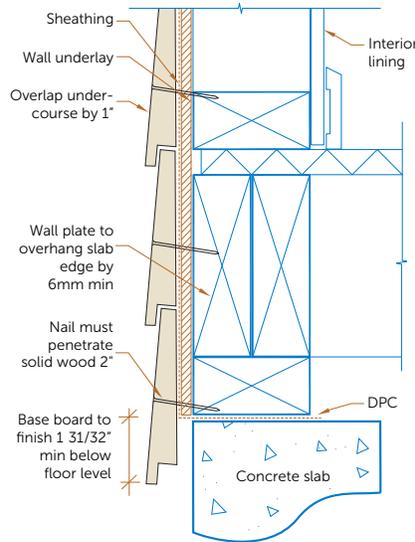
Face nail with one 2 1/2" nail, located 1 1/4" from bottom joint.

### Rabbeted Bevelled Siding Plan

#### 1 Direct fixed to base of wall & concrete floor



#### 2 Direct fixed to base of wall & timber floor



- When fixing Bodyguard horizontally, nail through siding into each stud line. Nail must penetrate solid wood 2".
- Nailing should not exceed 24" centres in the horizontal plane.
- For V-Rustic, Cover, Bevel Channel, Lap and Bevel, note the requirement for 1/16" expansion clearance at each lap.
- A 6" clearance is required between exterior of building over earth, or a 2" clearance over concrete.
- When fixing, ensure the groove is positioned at the bottom of the siding.

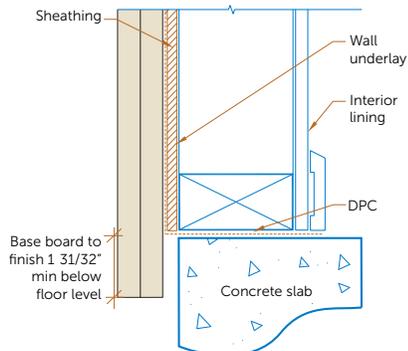
#### Important note

A 6" clearance is required between exterior of building over earth, or a 2" clearance over a concrete slab.

## VERTICAL INSTALLATION

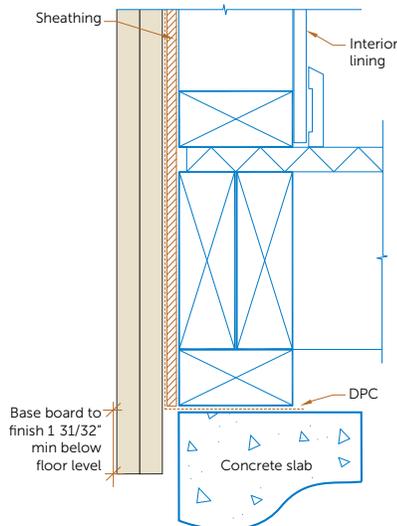
### Board & Batten Siding Plan

#### 1 Direct fixed to base of wall & concrete floor



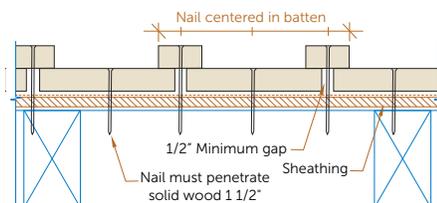
Face nail through center of batten and siding with fixing into 1 1/2" solid wood.

#### 2 Direct fixed to base of wall & timber floor



Face nail through center of batten and siding with fixing into 1 1/2" solid wood.

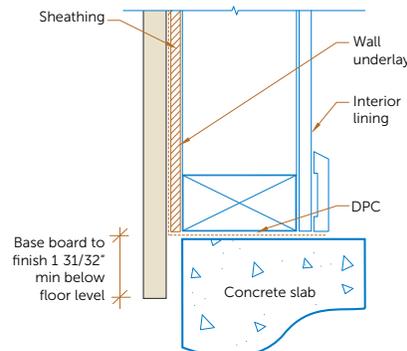
#### 3 Vertical Siding Gap Plan



Face nail through center of batten and siding with fixing into 1 1/2" solid wood.

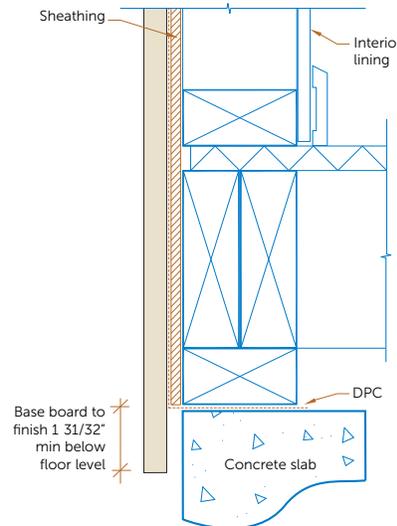
### Shiplap Siding & Nickel Gap Siding Plan

#### 1 Direct fixed to base of wall & concrete floor



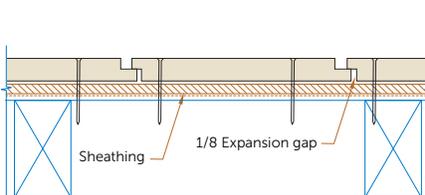
Face nail with one, 2 1/2" nail, located 1 1/2" from bottom overlap.

#### 2 Direct fixed to base of wall & timber floor



Face nail with one, 2 1/2" nail, located 1 1/2" from bottom overlap.

#### 3 Vertical Siding Gap Plan



Face nail with two nails. Bottom nail 1 1/2" from overlap, top nail 2" from underlap.

- When fixing Bodyguard vertically, nail through siding into each blocking line. Nail must penetrate solid wood 2". Alternatively, vertical siding can be nailed to 1" x 3" furring string and solid wood sheathing.
- Nailing should not exceed 24" centres in the vertical plane.
- For batten installation, note the requirement for 1/2" minimum expansion gap.
- For Shiplap installation, note the requirement for 1/8" minimum expansion gap.
- A 6" clearance is required between exterior of building over earth, or a 2" clearance over concrete.

#### Important note

A 6" clearance is required between exterior of building over earth, or a 2" clearance over a concrete slab.

# Frequently Asked Questions

## What is Bodyguard?

Bodyguard is a range of premier finger-jointed New Zealand radiata pine products that incorporate a carbon-based biocide treatment system.

## What is the difference in durability between Bodyguard products and other coated untreated products?

Bodyguard is protected by a proven pressure treatment that achieves total (100%) penetration of the sapwood. This wood preservative is effective against both fungi (rot) and insects (termites), so the underlying wood material in Bodyguard is resistant to degradation.

## Where does the timber come from?

Bodyguard products are manufactured from New Zealand radiata pine grown in well-managed tree-farmed forests.

## What is in Bodyguard products?

Bodyguard products are treated with a carbon-based wood preservative based on three active ingredients; Tebuconazole, Propiconazole and Permethrin.

The minimum retentions are:

**Tebuconazole.** 0.03% mass of ingredient/mass of oven-dry wood substance.

**Propiconazole.** 0.03% mass of ingredient/mass of oven-dry wood substance.

**Permethrin.** 0.02% mass of ingredient/mass of oven-dry wood substance.

## What do these active ingredients do?

Tebuconazole and Propiconazole are fungicides that control wood-destroying fungi. Permethrin is an insecticide that controls wood destroying borers and termites.

## Where else are these active ingredients used?

All are used for other wood protection applications, but in addition their uses are:

**Tebuconazole.** A systemic fungicide with USA Environmental Protection Agency (EPA) approval for use on mushrooms, corn, wild rice, peanuts, almonds, sorghum, oats, pecans, apricots, peaches, nectarines, plums and prunes.

**Propiconazole.** A systemic fungicide with USA EPA approval for use on food crops e.g. cereals, bananas, coffee, peanuts, stone fruit, corn, pineapples, and cherries.

**Permethrin.** A USA EPA-approved insecticide found in such products as fly sprays, head lice shampoos, and used to provide insect control for stored fruits and grains.

## Will preservatives leach from Bodyguard products?

No. The carbon-based biocides used in the Bodyguard process do not dissolve in water.

## Are there any emissions to air from Bodyguard products?

Yes. When freshly treated and primed, minor quantities of the hydrocarbon solvent may evaporate from the ventilating wood. With exposure to good drying conditions, this will cease within days.

## What handling precautions should I take when handling Bodyguard products?

As with all wood products, we recommend wearing leather gloves when working with Bodyguard products. Wear a dust mask and eye protection when using woodworking machinery.

See the Material Safety Data Sheet on our website for more detail.

## Are Bodyguard products safe to handle?

Yes. The protected wood is safe to handle. As with all wood products we recommend wearing leather gloves as a standard safety precaution. The active ingredients are all approved for use on food crops. The USA EPA has specifically approved the preservative system for this application.

## Where can I use Bodyguard products?

In doors and window frames, siding and other exposed millwork and trimboard. The preservative system is intended to protect the wood in above ground, exposed applications but MUST NOT be used in ground contact. Bodyguard is designed for a non-structural application unless otherwise specified.

## Can Bodyguard be used indoors?

Yes, Bodyguard is safe for indoor use, as well as exterior (above ground only). With indoor use, there may be a noticeable odor following installation. Simply ensure the area where Bodyguard is installed is well ventilated and this odor will disappear after a short time.

## Is the product warranted?

Yes, Bodyguard products are supported by a 30-year limited warranty against decay and insect attack.

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### How long will Bodyguard products last?

Bodyguard products are warranted for 30 years against decay and insect (termite) attack, but based on experience and tests over a number of years in Europe, Australia and New Zealand the service life extends beyond 30 years. The better Bodyguard products are maintained, the longer they will last; so keep paint coatings in good order and follow recommended installation instructions with regard to end-sealing.

### How do you know the treated wood will resist rotting?

The preservative formulations used in Bodyguard products have been commercially used in the United Kingdom for many years and USA for 20 years. It also has a successful 30-year history of durable use in New Zealand and Australia and continues to be the treatment of choice for products and profiles similar to Bodyguard.

New Zealand radiata pine treated with these preservatives has been tested under extreme conditions by the New Zealand Forest Research Institute and been found to provide excellent resistance to decay.

### Why do I have to use a preservative on cut ends of Bodyguard products?

While the Bodyguard treatment process achieves 100% sapwood penetration, the heartwood penetration can be variable. Bodyguard products are made from New Zealand radiata pine, which has a low heartwood content. However if cutting or re-machining there is a slight risk that some untreated heartwood could be exposed. For this reason a brush-on or spray-on preservative containing zinc naphthenate should be used to provide additional protection.

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### Is maintenance required?

Like all wood products, the long-term appearance and performance of Bodyguard products can be extended through regular painting and washing. Refer to your paint supplier for suitable coatings.

### Are Bodyguard products made from solid wood?

Yes. Bodyguard products are manufactured from finger-jointed solid New Zealand radiata pine.

### What is finger-jointing?

Finger-jointing refers to a method of cutting out defects, like knots and resin pockets, then joining the remaining clear pieces of timber to make long lengths of clear, straight wood. The resulting joints are stronger than the wood around them, and the adhesive is unaffected by moisture.

### What fasteners should I use for Bodyguard products?

Whilst there is no risk of corrosion to fasteners from the carbon-based biocide Bodyguard preservative system, when used outdoors, corrosion resistant fasteners should be specified, such as hot-dipped galvanised nails or stainless steel.

### Will Bodyguard products shrink or swell in service?

Bodyguard products are supplied in a kiln-dried form at approximately 10-15% moisture content. However like all wood products Bodyguard will experience some dimensional change with changes in moisture content. Strict adherence to the product storage guidelines and the painting recommendations will minimize this.

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### Are Bodyguard sidings approved to California Wildfire Urban Interface building standards?

Yes, ten siding profiles have been approved. In addition our T&G profiles have been approved for use under eaves.

### Can Bodyguard be used in structural situations?

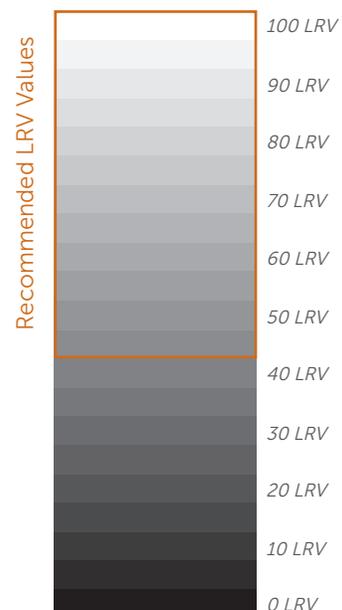
The current standard Bodyguard range is non-structural. For structural solutions please contact Bodyguard directly with your requirements.

### Can I paint Bodyguard with dark colors?

We recommend Bodyguard is painted with colors that have a Light Reflectance Value (LRV) of 45-100 (100 being pure white). Colors with a LRV of 44 to 0 (0 being pure black) progressively generate extreme surface heat when exposed to direct sunlight. Over time this heat can cause resin bleed, shrinkage, distortion and cracking and will also reduce the service life of the paint coatings.

For more detailed information please visit [www.bodyguardwood.com](http://www.bodyguardwood.com)

Light Reflectance Value Chart



# Performance Summary

## Bodyguard efficacy

### Bodyguard describes a range of New Zealand radiata pine products protected by a wood preservative system based on carbon-based biocides.

When combined, the three active ingredients Tebuconazole, Propiconazole and Permethrin provide fungicidal and insecticidal protection to pine.

All three actives are approved by the USA Environmental Protection Agency (USA EPA) for a diverse range of other uses and are also approved in combination for the wood preservative formulations used to impregnate the Bodyguard product.

The USA EPA approved wood preservative formulations also include proprietary water repellent systems to further enhance protection. Once the residual carrier solvent has evaporated following treatment, the pine products may also be coated with a paint primer, which provides additional protection for some uses.

Bodyguard product is intended for use in above ground, exposed applications. Examples are door and window frames, siding and exposed millwork. The registered Bodyguard suppliers support Bodyguard product with a 30-year limited warranty against decay and insect attack. This warranty is based on an assessment of the proposed end uses and the results from testing of the treated wood products by independent external organisations.

Bodyguard product is treated to a retention level to 0.27 kg/m<sup>3</sup> (0.06% m/m) expressed as total azole (Tebuconazole plus Propiconazole) together with 0.09 kg/m<sup>3</sup> (0.02% m/m) Permethrin. The efficacy of the preservative system has been evaluated in both laboratory and field tests.

The Permethrin retention in the Bodyguard product is already approved in Australia and New Zealand (AS 1604, NZS 3640) for protection of any softwood species to be used in above ground exposed to weather situations. Typically Bodyguard is used for cladding, decking, exterior joinery, fascia or barge boards. This Permethrin retention is effective against termites such as *Coptotermes acinaciformis* and *Mastotermes darwinensis*.

The azole biocides provide the fungicidal protection for Bodyguard product. A soil jar decay test has been undertaken at the Division of Forest Products, CSIRO, Australia. Test blocks of New Zealand radiata pine and eucalyptus regnans were impregnated then leached in water and artificially weathered in a vacuum oven prior to exposure to test fungi. The pine blocks were exposed to four brown rot fungi, the e. regnans blocks to two white rots.

The results after the 12 weeks exposure to the test fungi are available graphically on request. The toxic threshold is between 0.25 and 0.5 kg/m<sup>3</sup> for the brown rot fungi and <0.125 kg/m<sup>3</sup> for the two white rots. Bodyguard product is treated to a minimum retention of 0.27 kg/m<sup>3</sup> (expressed as total azole).

In addition, L-joint field tests have been undertaken at the Queensland Forestry Research site in Australia. The L-joint test is designed to simulate joinery applications and to accelerate the rate of failure in test samples. To achieve this the L-joint unit is first assembled

then painted before the joint is opened to break the paint film. The break allows in moisture and the paint coating may also hinder the evaporation of any water further promoting a more severe decay hazard.

The oldest L-joints at a retention of 0.09 kg/m<sup>3</sup> (0.018% m/m) total azole have slight attack after nine years exposure. This is considerably lower retention than commercially available Bodyguard product.

In contrast the untreated joints are severely decayed. A second L-joint test with New Zealand radiata pine was established in 1996. After seven years' exposure the untreated L-joints have severe decay at the internal tenon joint. Only a single joint from the original set of untreated controls now remains in service. Also in this test the benefit of adding a water repellent was demonstrated. All the 0.23 kg/m<sup>3</sup> azole treated L-joints are in good condition with some slight discoloration or softening. This treatment level is less than Bodyguard product.

## Summary

In summary, Bodyguard products are protected from termite attack by Permethrin, and from wood decay by a synergistic Propiconazole and Tebuconazole mixture. The preservative performance is further enhanced with the addition of a proprietary water repellent system.

Bodyguard is supported with a 30-year limited warranty against termite and decay damage.

For an updated copy of this manual either contact your registered Bodyguard distributor or visit

[www.bodyguardwood.com](http://www.bodyguardwood.com)

# Warranty

## 30-year limited warranty against insects and decay

Bodyguard products are proudly supported in all USA States, by a 30-year limited warranty against fungal decay/rot and insect attack (termites).

Where any Bodyguard product used in its recommended application becomes structurally unserviceable within 30 years of purchase due to rot, fungal degrade or termite attack, replacement material will be provided by the manufacturer. Replacement is for material only and is exclusive of product removal, installation and all other consequential processes including painting and painting materials. This warranty is applicable to all original consumer purchasers or 'first-owners'.

To qualify for the Bodyguard 30-year limited warranty, the 'first-owner' must be the recorded owner of the property at the time the Bodyguard products are installed by the builder or contractor.

The Bodyguard warranty is not transferable from the first-owner to subsequent owners of the property. Proof of purchase, in the form of a dated sales invoice and a Bodyguard end-tag will be required to validate any claim against this warranty.

This warranty is subject to certain terms and conditions, including:

- Adherence to Building Codes and Standards.
- Adherence to Hazard Class practices.
- Adherence to use of an end sealer for cuts, nail and drill holes at time of installation.
- Normal movement of materials caused by climate change is not covered under this warranty.

To make a claim under the terms of this warranty, send a photograph and a description of the damage, along with the Bodyguard end-tag for each piece of wood claimed to have been damaged and a copy of the original purchase invoice to Bodyguard Wood Products Ltd.

For further information concerning these terms and conditions please consult your registered Bodyguard supplier or distributor.

For best performance and results, please ensure that you follow all of the recommendations as set out in this Bodyguard Technical Manual. This notice does not constitute the legal warranty. For full details of the warranty, refer to

[www.bodyguardwood.com](http://www.bodyguardwood.com)

## Limited 12-month primer warranty

The Bodyguard range of exterior timber products are treated to the American Wood Preservers Association (AWPA)\* classification code of category UC3A (coated, but not in contact with the ground) and have a two-coat, machine applied, alkyd primer system covering all surfaces. Alkyd primers are more resistant to moisture penetration and are particularly suited to coastal environments.

Although it is recommended that Bodyguard products have the finishing paint system applied as soon as practicable after installation, the primer's durability is guaranteed for a period of twelve months following installation and exposure to the elements.

This warranty is limited to primer paint REPLACEMENT and is exclusive of application and all other consequential processes and/or coatings. The primer warranty is also contingent on adherence to the paint manufacturers finishing coat surface preparation specifications or requirements, including ongoing maintenance.

While Bodyguard has no control over subsequent finishing paint application, our coating partners PPG Industries (Monarch™, Olympic™, Porter™, Manor Hall™, and Pittsburgh Paints™ products) may offer extended warranties based on adherence to their own application guidelines. Details of these warranties are available from your paint supplier. These warranties are separate to the substrate or primer warranties. For warranty limitations, refer to

[www.bodyguardwood.com](http://www.bodyguardwood.com)



**It's Real Wood Made Better.**

Disclaimer: For full details on these warranties, and their related disclaimers, please refer to  
[www.bodyguardwood.com](http://www.bodyguardwood.com)